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Skin-to-skin education for operating room staff

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Skin-to-Skin Education for Operating Room Staff

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By

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Abstract

Skin-to-skin contact has many benefits to both a new mother and her infant after birth. Maintaining body warmth, better bonding for both mother and infant, and increased duration of breastfeeding are a few of the many benefits of this practice. Although skin-to-skin contact is a common practice at birth, it has been utilized almost exclusively in vaginal births. It has not been widely or routinely practiced when a baby is delivered by caesarean section. This study evaluated an educational program for operating room staff regarding the benefits of skin-to-skin contact and how best to implement this practice in the operating room. A chart review was done before and after the intervention to look for significant differences between pre and post education data. The variables under review included a comparison of overall skin-to-skin contact implementation, the amount of contact time between mother and baby, the physical location of contact, and what type of nurse implemented the contact. The benefits of beginning skin-to-skin contact early apply not only to the new mother and her infant in vaginal birth situations, but also to mothers and babies in C-section deliveries.

Introduction

Cesarean section (C-section) birth rates have risen in all racial and ethnic groups from 1996 to 2007. In 2007, the C-section rate was among the highest ever reported in the United States at 1.4 million C-section births (Menacker & Hamilton 2010). C-sections are often performed due to certain complications that can arise from pregnancy, such as a breeched position, which is a risk to both the mother and the infant. One significant concern surrounding C-section birth is the impact on the mother's breastfeeding and how breastfeeding can be implemented in new mothers who are also post-surgical patients. Skin-to-skin contact is not a new term, but a relatively underused method in C-section births that has been shown to improve breastfeeding in infants. Skin-to-skin contact is defined as "contact immediately after birth by holding the naked baby against the mother's skin, between the breasts, lasting until the first feed or for as long as the mother wishes" (Mahmood et al. 2011). This concept is clinically significant in terms of establishing breastfeeding.

After an infant is delivered by C-section, the baby is usually taken immediately to the nursery while the C-section procedure is completed. The mother is then sent to the post-anesthesia unit for recovery. When the baby is removed from the mother, it causes stress on the infant and disrupts the bonding and stabilization between mother and infant (Bergman & Bergman 2013). When separation occurs between the mother and infant, it does not allow for adequate skin-to-skin contact. Due to a lack of skin-to-skin contact, the infant may have a more difficult time breastfeeding, or the mother may choose not to breastfeed her infant all together. The National Institute for Health and Clinical Excellence clearly states in their clinical guidelines "early skin-to-skin contact between the woman and her baby should be encouraged and facilitated because it improves maternal perceptions of the infant, mothering skills, maternal

behavior, and breastfeeding outcomes, and reduces infant crying" (National Institute for Health and Clinical Excellence 2012). Although skin-to-skin contact has begun to be implemented in more hospitals, it is important for the hospital staff to have the appropriate training so that skin-to-skin contact can be implemented correctly and successfully. If skin-to-skin contact occurs, it can increase the chances of breastfeeding after discharge as well as additional maternal/infant bonding and increased maternal satisfaction with care.

Literature Review

A study conducted by the Department of Obstetrics of Pakistan Institute of Medical Sciences defines skin-to-skin care as "a contact immediately after birth by holding the naked baby against the mother's skin, between the breasts, lasting until the first feed or for as long as the mother wishes" (Mahmood et al. 2011). For an infant to make the best transition, it needs its mother and this is where skin-to-skin contact comes into play. According to a study done by Bergman, when a baby is put on the mother's chest, it is covered with a blanket and is comforted by the mother's voice, smell, and heartbeat. By enabling a baby to have close contact with its mother immediately after birth, it enhances physiological aspects that help a baby function. This study also emphasizes the fact that babies are born knowing how to breastfeed (Bergman & Bergman, 2013). There should be no interruptions between mother and infant contact so a baby can begin breastfeeding as soon as possible (Bergman & Bergman, 2013). According to a study done by Thomson and colleagues, breastfeeding is considered the ideal form of nutrition for infants, but many mothers begin formula feeding their infants within two months after birth (Thomson et al. 1979). A study was also done on older infants to see if skin-to-skin contact would increase the chances of breastfeeding in babies who had severe latch-on problems. The study concluded that skin-to-skin contact shortened the time it took for the babies to latch on and

begin suckling. Skin-to-skin contact is thought to calm infants as well as increase the mother's positive feelings toward breastfeeding (Svensson et al. 2013).

Skin-to-skin contact has many benefits for the baby including the duration of time the mother is willing to breastfeed. In a systematic review done by Renfrew and colleagues, there is evidence that skin-to-skin contact of up to one hour after birth increases the duration of breastfeeding for up to one month after discharge (Renfrew et al. 2009). In the study performed by Mahmood and colleagues, they found that there was a significantly higher breastfeeding rate at one month and four month intervals for mothers who were in the skin-to-skin contact group versus the conventional care group (infants were brought to the radiant warmer immediately after the umbilical cord was cut). This study also showed that mothers in the skin-to-skin group had more satisfaction with the care provided than mothers in the conventional care group (Mahmood et al. 2011). Some studies have shown that skin-to-skin contact can be implemented with the infant's father instead of the mother. This has proven to enhance paternal bonding with the baby, but the delay in breastfeeding could cause feeding problems in the future depending on the baby (Velandia et al. 2011).

Although increasing the duration of breastfeeding is one of the most significant benefits skin-to-skin contact offers there are several other advantages associated with skin-to-skin contact. In a study performed by Phillips, skin-to-skin contact has been shown to provide physiologic stability. This includes stabilizing the newborn's respirations and oxygenation, increasing blood glucose levels, warming the infant, reducing stress hormones, regulating blood pressure, and decreasing crying (Phillips 2013). One of the most crucial aspects of the newborn experience is keeping the baby warm after birth. When babies are born, they are exposed to temperatures much colder than what they experienced in the womb. Skin-to-skin contact is a way

mothers can help regulate their infant's temperature naturally and improve morbidity and mortality outcomes for their newborns. The inability to regulate temperature properly usually occurs with premature infants, but research has shown that skin-to-skin contact between mothers and their infants helps regulate the baby's temperature. In a study performed by Vilinksy and colleagues, they found that babies who had skin-to-skin contact were not at risk for hypothermia when compared to a control group without skin-to-skin contact (Vilinksky et al. 2014). By using skin-to-skin contact, babies are able to warm themselves by utilizing their mother's body heat, which is a safe and cost-effective way to keep babies warm in the hospital and after discharge.

Skin-to-skin contact has also been shown to promote maternal attachment to their newborns. Phillips discusses that the levels of oxytocin in the mother's body are increased during skin-to-skin contact, which promotes increased relaxation, attraction, facial recognition, and maternal care-giving behaviors (Phillips 2013). Phillips also found that mothers who took part in skin-to-skin contact felt more confident and comfortable handling and caring for their infants. These mothers also kissed their babies more and spent more time looking into their infant's faces at three months postpartum. Mothers who performed skin-to-skin contact at the hospital also demonstrated more touching, holding, positive speaking behaviors, and kept more follow-up appointments with their doctors after one year. These mothers also breastfeed their infants longer (Phillips 2013). Bigelow and associates investigated the effect of skin-to-skin contact between mothers and their infants and the effect it had on postpartum depressive symptoms during the first three months postpartum and the mother's physiological stress during the first month postpartum. They concluded that mothers who participated in skin-to-skin contact had a reduction in their depressive symptoms as well as less physiological stress in the postpartum period (Bigelow et al. 2012). Both Phillips and Bigelow's work demonstrate that skin-to-skin

contact not only has lasting benefits for newborns, but benefits mothers as well. These benefits can ultimately improve caregiving abilities of the mother.

When infants are born, they are usually immediately separated from their mother, especially after a C-section birth. According to Phillips, infants interpret this separation as life threatening (Phillips 2013). When babies are separated from their mother, their initial response is to protest by crying and moving intensely. These types of responses are meant to receive attention from the mother who protects the baby from cold, hunger, and harm (Phillips 2013). When newborns begin crying incessantly, it impairs lung function, increases intracranial pressure, can slow the closure of the foramen ovale, and increase stress hormones (Phillips 2013). When babies continue to be ignored, they eventually cease crying, their temperature drops and their heart rate and metabolism slows (Phillips 2013). These symptoms can happen when babies are separated from their mothers in the neonatal intensive care unit for prolonged periods of time.

Although a newborn's brain is not fully matured when it is born, skin-to-skin contact has been shown to support brain development. Skin-to-skin contact, which also promotes attachment, is also important in the development of the newborn's ability to main homeostasis. Phillips concluded that infants at the age of one year, who have spent at least the first hour of birth in skin-to-skin with their mother were better able to self-regulate, were less easily frustrated, and were better able to calm themselves when upset (Phillips 2013). In her study, Phillips also found that early interpersonal events, such as skin-to-skin contact can positively or negatively impact the structural organization of the brain (Phillips 2013). "Early experiences may shape brain structure and function in a manner that is designed to provide the individual with the type of brain best suited to the environment he or she is born into. A traumatic or hostile environment

would require a brain designed for caution and defense, whereas a supportive environment would allow for a brain designed to grow and thrive. If the attachment relationship is, indeed, a major organizer of brain development, then attachment is far more important than simply providing a fundamental sense of safety and security" (Phillips 2013). Although bonding does not have to occur immediately after birth, for instance if the baby or mother is unstable, the longer after birth that the process is begun, the more difficult it is to initiate, which leads to a greater risk of incomplete bonding (Phillips 2013).

Usually skin-to-skin contact can be implemented if there is proper encouragement from a professional. This means that hospital staff education is needed to help encourage mothers of the importance of skin-to-skin contact. The hospital staff needs to know the importance of early contact between mothers and infants and the benefits of breastfeeding for the infants. One of the problems with skin-to-skin contact is that many members of the hospital staff do not have knowledge of how to handle this type of care for the infant. In a study conducted by Brimdyr, the hospital staff was educated on the aspects of skin-to-skin contact, practiced the procedure, and reviewed and discussed barriers and solutions for future implementation of skin-to-skin contact. This study found education alone was not enough to promote a change in the care given to new mothers. When the staff was educated and practiced the new form of care, they were more compliant with the skin-to-skin method and actually continued using it in their practice (Brimdyr et al. 2012).

Although skin-to-skin contact is a relatively new practice in the operating room (OR), many hospitals are utilizing this type of care almost exclusively in vaginal deliveries. However, some hospitals do not promote uninterrupted skin-to-skin contact because of the routine list of care activities nurses usually perform on newborns. Phillips suggests that anything that is not

necessary immediately after birth such as the vitamin K injection, eye prophylaxis antibiotic ointment, foot and hand printing, weighing, measurements, and bathing should be postponed until the mother has completed skin-to-skin contact (Phillips 2013). However, babies or mothers who appear unstable after birth should be stabilized first before skin-to-skin contact is initiated.

There is no universal protocol established for initiating skin-to-skin contact in the operating room. Many hospitals and hospital staff are afraid to initiate a change because it is not part of their routine procedure. The movement toward skin-to-skin contact in the OR is relatively new, but has been successfully implemented by several hospitals. Procedures for skin-to-skin contact in the OR vary according to hospital, however, Phillips gives an overview of how hospitals can look at implementing this practice into their care. "First, the nurse who will receive the baby and do the initial drying and placing of baby on mother's chest should check with the obstetrician and anesthesiologist prior to the delivery to verify that there are no concerns for the baby or the mother's stability. Secondly, she should introduce herself to the mother and confirm that she would like to hold her baby skin-to-skin immediately after birth (if this has not already been done). Lastly, a diaper should be ready as well as warm towels or blankets to dry and cover baby" (Phillips 2013). When the baby is delivered and the cord is clamped and cut, the nursery nurse will dry the baby and note the Apgar score. After drying the baby, the nurse will put a diaper on the baby and then place the baby on the mother's chest in a transverse position with the baby between the mother's breasts. A warm towel will be placed of the baby for warmth (Phillips 2013). A nurse should monitor the baby on the mother's chest until the surgery is complete. The nurse will assess that the baby's nares are always visible, the baby's color, that perfusion and respirations remain stable, and that baby does not slide off the mother's chest. When the mother is ready for transport out of the OR, the baby should already be positioned

between the mother's breasts and she should cross her arms over the infant (Phillips 2013). Although this is an overview of how a hospital can perform skin-to-skin contact in the OR, there are many other ways to go about this. Many hospitals have begun to implement their own policies and procedures regarding skin-to-skin contact in the OR using their own interdisciplinary teams.

One of the biggest issues with this new practice is a resistance to change. One hospital used Lewin's Change Theory and Roger's Diffusion of Innovation Theory to motivate the staff to support the change. After the proposed change went into effect, breastfeeding rates increased, as did maternal satisfaction with the birth experience (Maloof-Bury et al. 2013). Another hospital recognized that key elements of skin-to-skin contact after a C-section were open communication with the OR team and the family throughout the procedure, only placing the infant on the mother's chest if it was stable, monitoring the infant's axillary temperature every ten minutes, and performing the measurements, medications, and footprints when the mother is done (Duffy et al. 2013). The protocol at this hospital also included a surgical unit that was setup to allow the mother to select music, use dim lighting, provided an extra sterile plastic cord clamp, and positioned a warmed blanket and infant cap near the mother's head (Duffy et al. 2013). These are just a few examples of how hospitals have begun to implement skin-to-skin contact into their everyday care of patients. A study performed by Zauderer and colleagues, found that performing skin-to-skin contact immediately after C-section birth reduced mothers' anxiety regarding infant safety, improved trust and confidence in their nurses, and improved overall satisfaction with their C-section birth experience (Zauderer et al. 2012).

Although the importance of educating the OR staff about skin-to-skin contact is crucial, the parents of a newborn should also be informed as well. This parental education can occur

during prenatal appointments, prepared childbirth classes, and breastfeeding classes (Barabach et al. 2012). Other hospitals incorporated skin-to-skin education by labor and delivery nurses when patients were admitted to the unit (Brady et al. 2013). However it is done, educating new parents on the importance and benefits of skin-to-skin contact should be a part of the standard of care for maternity patients.

Although the research on skin-to-skin contact in the OR is limited, there is a multitude of research on the benefits of skin-to-skin contact for both mothers and their newborns. These benefits have lasting effects that can improve a baby's growth and development over the years as well as improve attachment between the mother and her infant. The benefits of skin-to-skin do not only apply to mothers, but also to hospitals. Skin-to-skin contact is cost-effective and promotes exclusive breastfeeding, thus eliminating the use of formula feeding in hospitals. Also, mothers who experience skin-to-skin contact have higher satisfaction with their care, their provider, and the hospital.

Study Aim

The aim of this study is to implement an educational program regarding skin-to-skin contact for operating room nurses to see if the program is effective in increasing the percentage of mothers exposed to skin-to-skin contact following a C-section. The study question for this project is: Will a skin-to-skin education program increase the implementation of skin-to-skin contact in the operating room?

Hypothesis

Based on the review of the literature, the following hypothesis is presented: There will be a statistically significant difference in the number of skin-to-skin contacts in mothers requiring a C-section following the educational intervention.

Methodology

Ethics

This project will be conducted following the approval of the University of Arkansas Institutional Review Board and the Quality Improvement Department of the study hospital.

Study Design

The study design for this project will be a retrospective medical record review along with an educational intervention. Patient medical records will be reviewed to determine the incidence of skin-to-skin contact used in the operating room and post anesthesia unit. Following the medical record reviews, an educational intervention designed to reinforce the benefits of skin-to-skin contact for infants and mothers as well as teaching the correct technique of skin-to-skin contact will be implemented for the OR nurses. A second chart review will be conducted to identify the effectiveness of the education program in terms of the number of skin-to-skin contacts provided to C-section patients.

Data Source and Sample

This study will take place in the maternity care unit and operating room of a Northwest Arkansas hospital. Currently, this hospital has decided to become an exclusive breastfeeding hospital. Skin-to-skin contact is now being implemented in all vaginal births and in approximately 70% of C-section births. The goal of this hospital is to have skin-to-skin contact become the standard of care post delivery for both vaginal and C-section births.

The sample will consist of all female patients who have undergone a C-section not requiring general anesthesia and who did not experience surgical complications that would

prevent skin-to-skin interaction. Female patients who have undergone vaginal delivery will be excluded from this study.

Intervention

This study will begin with a retrospective medical record review of all patients admitted to the hospital who delivered by C-section during the months of January 2013 to August 2013. All patient charts that are used in the study will be de-identified to comply with the Health Insurance Portability and Accountability Act. Medical records will be reviewed for documentation of the use of skin-to-skin contact between the mother and infant, the amount of time allowed for the skin-to-skin contact, and the location (i.e., OR suite or post-anesthesia unit). All nurses working in the OR and post anesthesia unit who would come into contact with mothers undergoing a C-section will be included in the educational intervention part of the study. Nurses may opt not to participate without any penalty to their work environment or status.

Analysis

All variables pertaining to the aforementioned hypothesis as well as the demographic characteristics of the participants will be analyzed by conducting a univariate analysis (frequencies for categorical variables and descriptive statistics on continuous variables). To test the hypothesis, a chi square test and a phi correlation test will be performed to determine if a significant difference between the pre and post number of skin-to-skin contacts exists. A level of significance of alpha= 0.5 will be set to determine statistical significance.

Results

This study investigated the impact of an educational intervention to implement a consistent skin-to-skin contact program in the OR. Several variables were compared by using a retrospective chart review of pre and post education data to determine the significance of the

educational intervention. The study took place from August 2014 to March 2015. Pre education charts were reviewed from November 2014 to December 2014. Data were excluded if the mother underwent general anesthesia for her C-section. The educational intervention took place on February 19, 2015. Post education data were collected from charts from February 2015 to March 2015.

The educational intervention consisted of a PowerPoint presentation on the morning of February 19, 2015 that included members of the day shift OR staff. The intervention began by describing the steps of the procedure that are involved with skin-to-skin contact in the OR. The first step occurs when the nursery nurse takes the baby after birth to be cleaned and dried. The one-minute Apgar score is done at this time. Next, the nursery nurse coordinates with the doctor to determine if the baby and mother are both stable enough to perform skin-to-skin contact. Based on the doctor's consent, the baby is to be laid on the mother with a blanket covering their bodies.

The benefits of skin-to-skin contact were explained to the OR staff so they could understand why this practice should be implemented immediately after birth. Benefits of skin-to-skin contact for the new mother and baby were explained including promoting bonding, breastfeeding, and warming of the infant. The purpose of learning about the benefits of skin-to-skin contact was so that the OR staff could educate mothers regarding skin-to-skin contact in the OR. Nursery nurses would be able to reinforce this teaching if necessary. Several benefits of skin-to-skin contact for the hospital were also explained including increased patient satisfaction and no additional incurred cost to the hospital.

After the educational intervention, charts were reviewed to collect pertinent data for analysis. The first variable reviewed was the number of skin-to-skin contacts implemented to

determine the effectiveness of the educational program on promoting skin-to-skin contact after C-section delivery overall. The second variable analyzed was the amount of time of skin-to-skin contact that occurred between the mother and baby. The third variable reviewed was where the physical location of the skin-to-skin contact took place to determine if skin-to-skin contact was being implemented more frequently in the OR. The final variable compared was the types of nurses that implemented the skin-to-skin contact. Nurses in this study included circulating nurses, scrub nurses, and nursery nurses.

Overall, there were 200 charts reviewed to obtain the data for this project, 100 for the pre education group and 100 for the post education group. To obtain a statistical analysis of the data collected, a chi-square test for association was conducted between the pre and post education implementation. All expected cell frequencies were greater than five. There was a statistically significant association between the educational intervention and skin-to-skin contact implementation, $X^2 = 4.204$, $p = .040$. There was a moderately strong association between the educational intervention and skin-to-skin contact implementation using a phi correlation test, $\Phi = 0.145$, $p = .04$. From the retrospective chart review, the results indicate the educational intervention was significant in improving overall skin-to-skin contact between mothers and their infants (Figure 1).

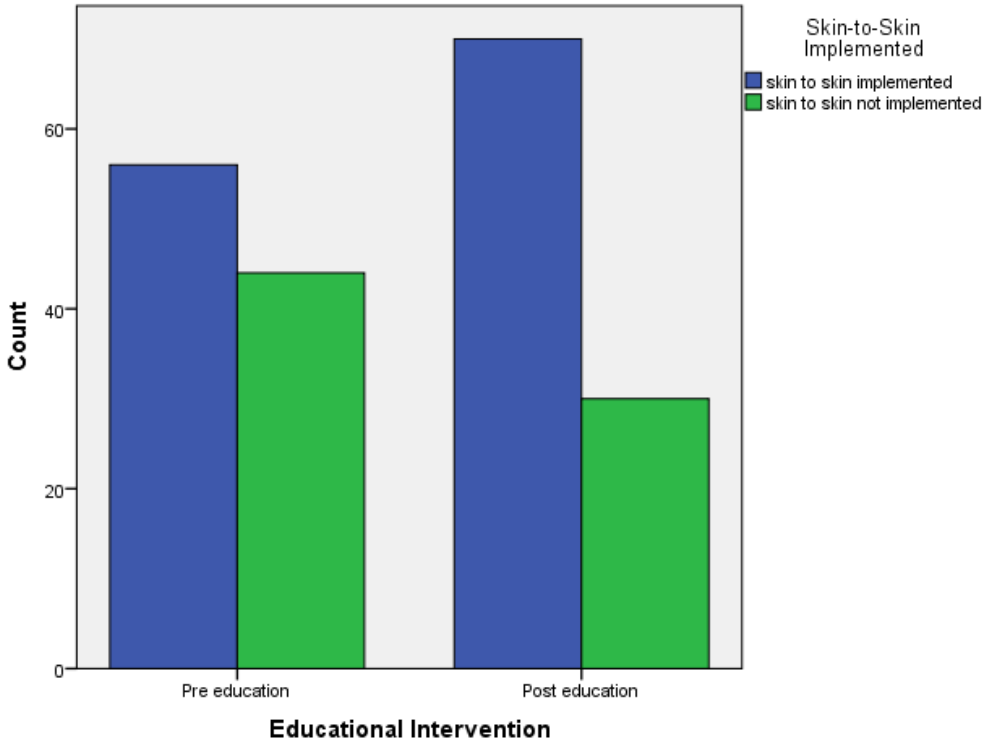

Figure 1. This graph shows the difference between pre education and post education interventions and the increase in skin-to-skin contact after the educational intervention.

Another aspect researched was the amount of contact time between the mother and infant after skin-to-skin contact was initiated both before and after the educational intervention. The data analysis showed there was more overall skin-to-skin contact post educational intervention and a dramatic increase in the initial time interval of 1-15 minutes (Figure 2). While pre education data revealed less overall skin-to-skin contact, the contact time intervals of 46-60 minutes and over 61 minutes were higher pre education than post education.

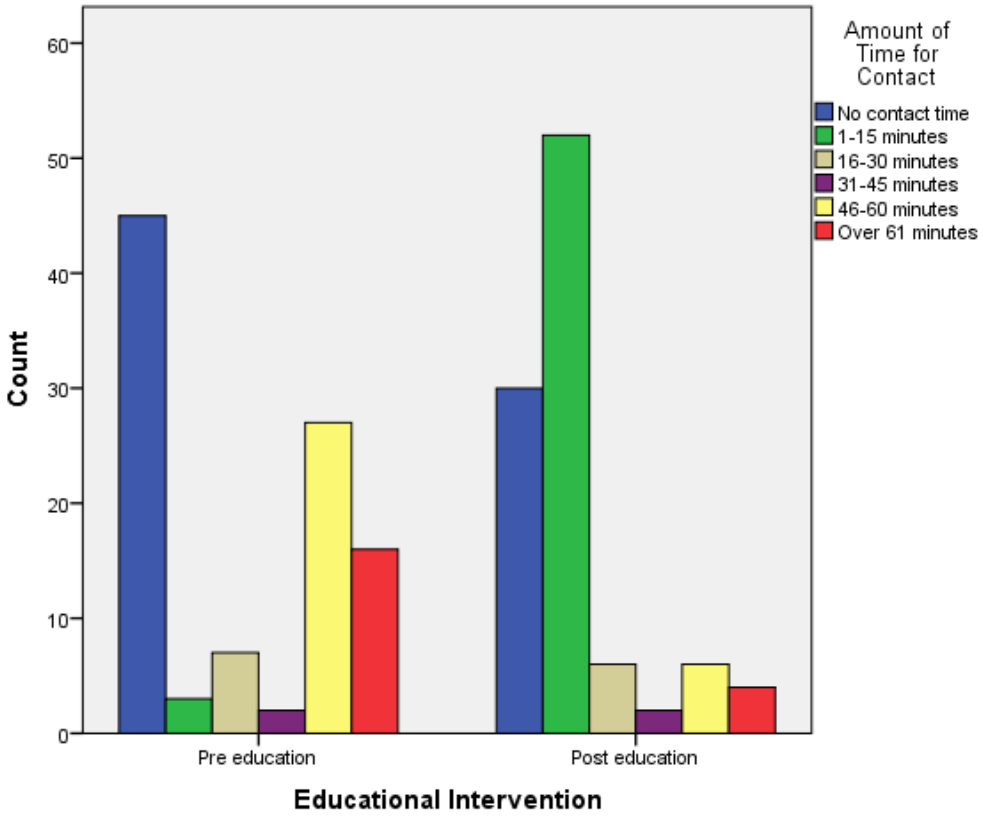

Figure 2. This graph shows the amount of contact time between mothers and infants who perform skin-to-skin contact. Although the pre education group has less skin-to-skin contact initiated, they have longer contact time. The post education group has more overall skin-to-skin contact, but less contact time.

The difference between these intervals can be explained by another aspect of the research, which included looking at where skin-to-skin contact was initiated. Before the educational intervention, most skin-to-skin contact was being initiated in the post anesthesia care unit (PACU). The goal of the educational intervention was to improve the implementation of skin-to-skin contact in the OR before transport to the PACU. This would explain the reason for less overall contact time because the mother spends less time in the OR than in the PACU. The educational intervention improved skin-to-skin contact being first implemented in the OR with most mothers continuing skin-to-skin after transport to the PACU (Figure 3).

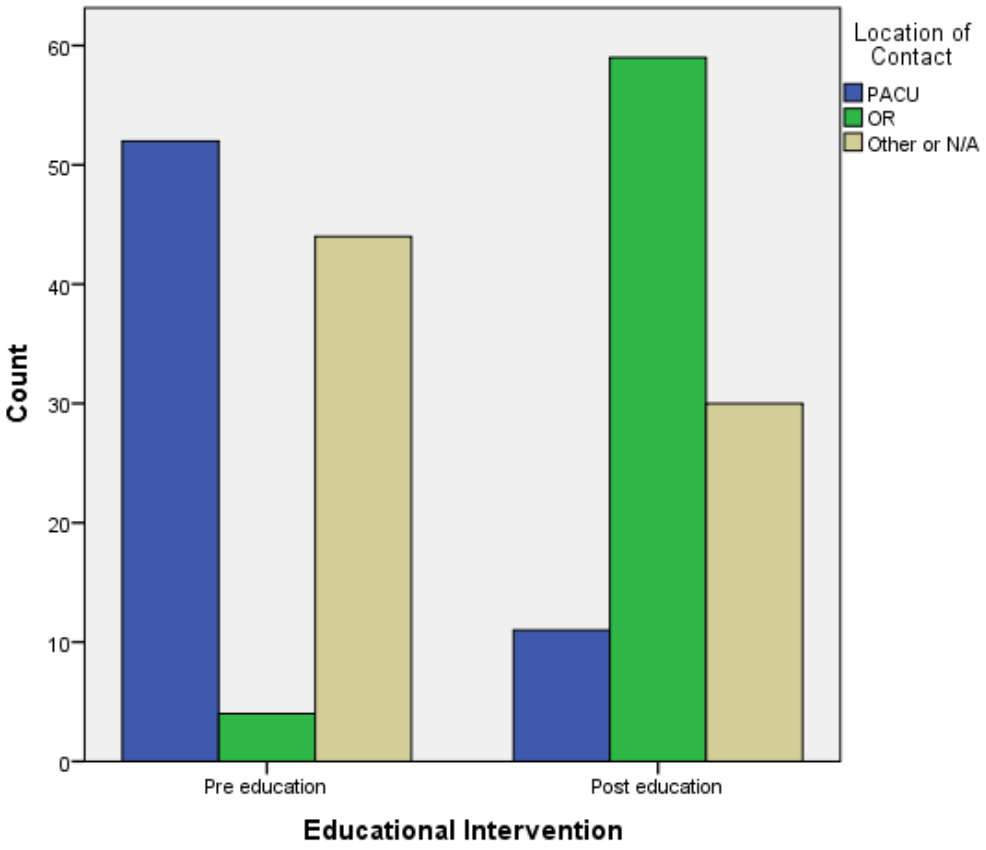

Figure 3. This graph shows the location of skin-to-skin contact for both pre and post-educational intervention. The occurrence of skin-to-skin contact first starting in the OR increased significantly after the educational intervention took place.

A final aspect that was reviewed during the retrospective chart review was the type of nurse who implemented the skin-to-skin contact. The categories of nurses included circulating, scrub, and nursery nurses. The pre education data showed only one circulating nurse had implemented skin-to-skin contact, with the majority of nursery nurses implementing skin-to-skin contact. No scrub nurses implemented skin-to-skin contact, which is understandable due to the fact that they are prepped for a sterile procedure and must not break the field of sterility. The post education data revealed there was not a significant increase in the amount of circulating nurses who implemented skin-to-skin contact (only two after the educational intervention).

Nursery nurses were the majority of those who implemented skin-to-skin contact. There were no scrub nurses that implemented skin-to-skin contact after the educational intervention.

Discussion

This study utilized a retrospective chart review to evaluate an educational intervention providing OR staff with education about skin-to-skin contact, its benefits, and how it can be successfully implemented in the OR. Chart reviews were done before an educational intervention was implemented to determine if skin-to-skin contact was being performed, where it was being performed, who was implementing it, and how long contact occurred between mother and baby. Pre education chart reviews showed 56 new mothers took part in skin-to-skin contact with their babies. These charts also revealed the average time span for contact was between 46-60 minutes and contact was primarily taking place in the PACU. Post education chart reviews showed there was an overall increase in both the number of mothers and infants participating in skin-to-skin contact as well as skin-to-skin contact being initiated in the OR. In the study by Brimdyr, similar results were found that showed when the hospital staff was educated and practiced the implementation of skin-to-skin contact in an educational setting, they continued to use this practice routinely with their patients (Brimdyr et al. 2012).

The amount of initial time for post intervention contact between mothers and their infants was between 1-15 minutes. Comparing contact times pre education versus post education, results indicate less time was spent in skin-to-skin contact with the post education group. However, this is likely due to the fact that after surgery, mothers and babies are separated and then each taken to the PACU based on hospital protocol. After this separation occurred, mothers and babies were reunited in the PACU and continued skin-to-skin contact. From the literature review, there was no relevant research that looked at the amount of contact time between mothers and infants

performing skin-to-skin contact. This study is the first to examine the amount of contact time between mothers and their infants both pre and post educational intervention to determine any significant differences.

Before the educational intervention occurred, the primary reason skin-to-skin contact was not being implemented in the OR was because there was no specific program or requirements in place in the OR regarding skin-to-skin contact. OR staff members were aware of the practice, but did not know the benefits of skin-to-skin contact or how best to implement the practice. Brimdyr found similar results regarding the lack of education among the hospital staff (Brimdyr et al. 2012). In contrast, this study was directed specifically towards OR staff so the educational intervention implemented was tailored to meet their needs. Another common reason for lack of reported instances of skin-to-skin contact was lack of documentation. A new charting system was implemented in 2013 and included a place to record skin-to-skin contact information as well as the location and amount of time of contact for skin-to-skin contact. Over the past two years, staff has begun to document skin-to-skin contact more consistently so it is known if skin-to-skin contact is occurring or, if not, reasons why it is not occurring.

Based on feedback from the educational intervention, OR staff was aware of implementing skin-to-skin contact in the OR, but had not begun to develop or formalize a procedure to implement it. Through the educational intervention, the benefits of skin-to-skin contact for the mother, infant, and the hospital were presented through a PowerPoint presentation that consisted of current and relevant research regarding the benefits of skin-to-skin contact and how to implement it in the OR setting. After the educational intervention occurred, the primary reasons reported in the charts for not implementing skin-to-skin contact were found to be refusal of the mother or instability of the mother, infant, or both. Phillips (2013) states that OR staff

should not implement skin-to-skin contact if the mother refuses or if either mother or baby is unstable. This recommendation is being implemented in this particular facility to provide patient-centered care and safety.

Overall, it was shown that the educational intervention implemented in this study created a significant increase in the implementation of skin-to-skin contact, the amount of contact time, and the physical location of the initial skin-to-skin contact. This study is the first to examine the combination of these three variables together. Several studies have looked at the benefits of skin-to-skin contact education in the implementation of skin-to-skin contact, but there are no relevant studies reviewed that looked at amount of contact time and physical location of skin-to-skin contact as well.

There were a number of limitations to this study. Accurate documentation from the charts cannot be validated, meaning one could not be certain that all cases of skin-to-skin contact were properly documented. There could be more instances of skin-to-skin contact that occurred that were not documented appropriately. The amount of time or physical location of contact may be subject to inaccuracy if the documentation did not accurately reflect where skin-to-skin contact took place (OR versus PACU). Another limitation that might influence the results is the fact that the entire OR staff could not participate in the educational program. Due to a strict schedule, the program could only be presented once to the day shift OR staff working that day. Some of the staff members were not part of the educational intervention and their understanding of the initiative or their resistance to a change they were not fully aware of could have impacted the results.

This study should be continued to ensure this facility fully implements a skin-to-skin contact program to obtain Baby-Friendly Hospital standards. The entire OR staff should be

educated on implementing skin-to-skin contact in the OR during C-section births emphasizing its benefits to patients and the hospital. Although the OR staff may initially be implementing this practice because it is mandatory, they should continue to be reminded of the benefits of skin-to-skin contact so that it will become standard procedure in the OR. The results of this study and the results of future work should provide positive data showing the benefits of implementing skin-to-skin contact in the OR. In addition, a study should be undertaken to evaluate patient satisfaction. Other research has shown patient satisfaction with the hospital and its caregivers increased when skin-to-skin contact was utilized as part of the birthing process (Mahmood et al. 2011). As a follow up to this study, a recommendation should be given to the facility to implement a formal protocol and include training for all personnel to consistently provide new mothers with the option of skin-to-skin contact in the OR.

Conclusion

Research supporting the practice of skin-to-skin contact has proved to be beneficial to both mother and baby in a variety of ways. This research builds on current evidence regarding the new and successful implementation of skin-to-skin contact in the operating room. The goal of this study was to increase the OR staff's knowledge regarding the benefits of skin-to-skin contact and explain to the nursing staff how it can be implemented in their hospital setting. By including the OR staff in the education process, they were able to learn the benefits of skin-to-skin contact and understand why this practice is important to their patients. They were also able to understand the benefits of early skin-to-skin contact to the hospital including increased patient satisfaction rates with no additional costs incurred to the hospital. The implementation of skin-to-skin contact in the operating room is a major contributor to the hospital becoming a Baby-Friendly Hospital, which is a goal the hospital has for the future.

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